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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,468	06/07/2001	Takaaki Hirai	107176-00006	6366
23353	7590	03/04/2004	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			CHANG, VICTOR S	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/856,468	HIRAI ET AL. <i>elb</i>
	<b>Examiner</b>	<b>Art Unit</b>
	Victor S Chang	1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. §133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 21 January 2004.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1,3-8 and 10-20 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-8 and 10-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. The Examiner has carefully considered Applicants' amendments and remarks filed on 1/21/2004. Applicants' newly submitted Declaration, amendments to claim 15, cancellation of claim 9 have all been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn. In particular, the objection to the amended specification has been withdrawn in the Advisory action (Paper No. 121503). Further, in view of the amended specification, the rejection under 35 U.S.C. 112, first paragraph, in section 7 of Paper No. 0915, is also withdrawn. Lastly, upon reconsideration, the rejection under 35 U.S.C. 103(a) as being unpatentable over JP 08-174590 individually in section 8 of Paper No. 0915 is withdrawn, so as to clarify the relied upon elements taught by Park.

***Response to Amendment***

4. Claims 1, 3-8 and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-174590 (computer translated English copy) in view of Park (US 5475037), substantially for the reasons set forth in section 8 of Paper No. 0915, together with the following additional observations.

With respect to Applicants' repeated argument that "There is no reason that a person of ordinary skill in the art would determine that a pre-expanded foam particle

should have the presently claimed bulk density based on JP '590" (Remarks, page 8, top paragraph), the Examiner repeats (see page 4 of Paper No. 0915) that it is conventional to prepare pre-expanded particles with a low bulk density in the range of 0.01 to 1.0 g/cm<sup>3</sup>, as taught by Park in Example 4, which shows a pre-expanded having a density of 27.55 kg/m<sup>3</sup>, i.e., 0.028 g/cm<sup>3</sup> (column 7, line 66). As such, a suitable density of pre-expanded foam particles is believed to be either inherently disclosed, or an obvious optimization to one skilled in the art, motivated by the desire to be able to form a molded article with a suitable bulk density.

With respect to Applicants' repeated argument that "JP '590 fails to teach these compounds merely form a minor part of the resin ... A person of ordinary skill in the art would, at best, be motivated to form a resin having a much higher concentration than 0.5 to 10% of the isophthalic acid or 1,4-cyclohexanedimethanol from reviewing JP '590" (Remarks, page 8, second paragraph), the Examiner notes that Applicants' argument lacks any evidentiary support. Further, the Examiner repeats (see pages 3-4 of Paper No. 0915) that JP '590 expressly teaches that a suitable low crystallinity is essential to the pre-expanded foam particles (e.g., "crystallinity of 25% or less is maintained" is disclosed in Abstract), and in view of Park's teaching that a copolyester obtained by copolymerizing with isophthalic acid and cyclohexanedimethanol, or mixtures thereof, in an amount of greater than about 15 wt% of co-monomers provides an amorphous copolyester resin (column 12, lines 25-56), it would have been obvious to one of ordinary skill in the art to incorporate only a suitable smaller amount of the aforementioned co-monomers (e.g., less than 15 wt%, as taught by Park), motivated by

the desire to obtain pre-expanded foam particles having a suitable low crystallinity (i.e., not fully amorphous, as taught by JP '590.

With respect to Applicants' argument that "an invention is not obvious over prior art that discloses differences in concentrations between chemicals in the prior art and in a claimed invention, where there is evidence on record establishing the criticality of the claimed concentration" (Remarks, page 9, bottom paragraph), the Examiner notes that the combined teachings of JP '590 and Park clearly point to a suitable co-monomer concentration in the range of less than 15 wt%, which encompasses the instantly claimed 0.5 – 10 wt%. As such, the Examiner asserts that, in the absence of unexpected results, a suitable co-monomer concentration is either implicitly disclosed by JP '590 in view of Park, or an obvious optimization to one of ordinary skill in the art of copolymerization, motivated by the desire to obtain pre-expanded foam particles having a suitable low crystallinity (i.e., not fully amorphous, as taught by JP '590.

Finally, Mr. Hirai's Declaration has been carefully considered, but is not persuasive. More particularly, while the experimental results confirmed that a suitable crystallinity in the pre-expanded foam particles is critical for obtaining a well fused molded foam article, it lacks unobviousness in view of the teachings of JP '590 and Park, as set forth above.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Victor S Chang*  
Victor S Chang  
Examiner  
Art Unit 1771

2/25/2004